

I CLAIM:

5           1. Method for melting a material in an annulus between the surface and production casing of an oil or gas well, said method comprising positioning said material at a predetermined location in said annulus and applying heat to said material, melting said material by said application of said heat and terminating said application of said heat following said melting of said material thereby to allow said material to solidify within said annulus and to form a seal within said annulus.

10           2. Method as in claim 1 wherein said material is a thermosetting resin.

15           3. Method as in claim 1 wherein said material is sulfur.

4. Method as in claim 1 wherein said heat is applied by electrical induction.

5. Method as in claim 1 wherein said heat is applied by electrical resistance.

20           6. Method as in claim 1 wherein said predetermined location is determined by adding tracer elements to said material and obtaining the position of said tracer elements in said annulus.

7. Method as in claim 1 wherein the melting of said material is affected by the use of pressure applied within said annulus.

5           8 Method as in claim 7 wherein said pressure is applied by compressed air or pressurised nitrogen injected into said annulus and maintained at a pressure within said annulus.

10           9. Apparatus for melting material in an annulus between the production and surface casing of an oil or gas well, said apparatus comprising an opening to allow the injection of said material into said annulus and to assume a predetermined location within said annulus, heating apparatus to apply heat to said material at said predetermined location within said annulus and to melt said material within said annulus and a switch to initiate and terminate said application of said heat to said material.

15           10. Apparatus as in claim 9 wherein said heating apparatus is an electrical induction heating apparatus.

20           11. Apparatus as in claim 9 wherein said heating apparatus is an electrical induction heating apparatus.

12. Apparatus as in claim 9 wherein said heating apparatus is an electrical resistance heating apparatus.

13. Apparatus as in claim 9 wherein said material

is a thermosetting resin.

14. Apparatus as in claim 7 wherein said material is sulfur.

15. Apparatus as in claim 7 and further comprising a supply of compressed gas to provide gas to said annulus.

16. Apparatus as in claim 15 wherein said compressed gas is nitrogen and/or air.